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ABSTRACT

This report identifies steps that might be taken by organizations, individual libraries, and libraries acting collectively to work towards resolution of the many problems that create the difficult and complex situation facing research libraries that has been brought on by the physical deterioration of books and journals. An attempt is made to clarify the nature of the preservation problem and to assess progress made in recent years. A number of specific recommendations for action are made. In the area of research into the causes of paper deterioration and remedial techniques, a method of generating broader participation is suggested. An analytical investigation of the merits of alternate methods of text preservation is also proposed. Additional needs in the area of education and training are identified, and the importance of specific preservation activity by individual libraries is underscored. The fundamental requirement that preservation of library materials be seen as an inseparable part of the broader objective of extending access to recorded information is affirmed. Approaches to developing a capability for collective action are advanced, and measures to be taken in such areas as storage standards, identification and recording of preservation copies, and preservation priorities are suggested. (Author/SJ)

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FINAL REPORT

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PREPARATION OF DETAILED SPECIFICATIONS FOR A NATIONAL SYSTEM FOR THE PRESERVATION OF LIBRARY MATERIALS

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Association of Research Libraries
Washington, D.C.

February 1972

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AUTHOR'S ABSTRACT

This report seeks to identify specific steps that might be taken by organizations, individual libraries, and libraries acting collectively to work towards resolution of the many problems that, taken together, create the difficult and complex situation facing research libraries that has been brought on by the physical deterioration of books and journals. The report, which takes the recommendations made in earlier studies sponsored by the Association of Research Libraries as a point of departure, seeks to clarify the nature of the preservation problem and to assess progress made in recent years. Reflecting a synthesis of viewpoints from several sources, the report makes a number of specific recommendations for action.

In the area of research into the causes of paper deterioration and remedial techniques, a method of generating broader participation is suggested. An analytical investigation of the merits of alternate methods of text preservation is also proposed. Additional needs in the area of education and training are identified, and the importance of specific preservation activity by individual libraries is underscored. The fundamental requirement that preservation of library materials be seen as an inseparable part of the broader objective of extending access to recorded information is affirmed. Approaches to developing a capability for collective action are advanced, and specific steps to be taken in such areas as storage standards, identification and recording of preservation copies, and preservation priorities are suggested.

PREFACE

The Association of Research Libraries, primarily through its Committee on Preservation of Research Library Materials, has sought to direct attention to and promote action on the complex of problems related to the deterioration of books and manuscripts in the research collections and archives of the country. The Committee has promoted specific fact-finding projects; it has sponsored studies to assess the magnitude and significance of collection deterioration; and it has sought to formulate plans for a national effort directed towards a solution.

This statement is another step in this continuing activity designed to move towards an acceptable resolution of what is, in its essence, a most complex and difficult matter. The preparation of this paper has been accomplished under a grant made to the ARL in the spring of 1970 by the Office of Education, Department of Health, Education, and Welfare. Some initial work was done by Murray L. Howder, until late 1970 a member of the ARL staff, and the project was brought to completion by the undersigned. The members of the ARL Preservation Committee, as well as a number of others, participated in discussions that helped cast the nature of the suggestions made here, and many of these same individuals commented on and contributed directly to the substance of the report.

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Chairman
ARL Committee on Preservation
of Research Library Materials

December, 1971

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1. INTRODUCTION

1.1 Purpose
1.2 Scope and Method

1.1 Purpose

Late in 1962, the Council on Library Resources, Inc., granted funds to the Association of Research Libraries for a study to plan a program for the dissemination and preservation of research library materials. The study was undertaken by Gordon R. Williams, with the participation of the ARL Committee on the Preservation of Research Library Materials. The final report, The Preservation of Deteriorating Books: An Examination of the Problem with Recommendations for a Solution, was completed late in 1964 and its recommendations endorsed in principle by the ARL early in 1965. The report is published in the Minutes of the Sixty-Fifth Meeting of the ARL and in Library Journal, 91 January 1 and January 15, 1966: 51-56, 189-194.

After establishing the reasons for and the dimensions of the problem of the deterioration of paper and the impact of that deterioration on collections of books and manuscripts, the Williams report concluded that "The most effective and efficient way to insure the continued availability of this information to all scholars is to establish a central agency that will insure the physical preservation of at least one example of every deteriorating book and that will make photocopies of these preserved originals readily available to all libraries."

More specifically, the report asserted

> ... that the most practicable solution is a federally supported central agency that will assure the physical preservation for as long as possible of at least one example of every deteriorating record, and that will make copies of these records readily available to any library when required. Such an agency would (1) undertake the centralized preservation of deteriorating records deposited by libraries; (2) coordinate its own preservation program with local programs of individual libraries to assure that all significant records are preserved while avoiding unwitting duplication; (3) assure the ready availability of microform or full-size photocopies of deteriorating materials to all libraries; and (4) itself preserve, in the interest of textual preservation, economy, and the ready availability of copies, all microform masters made at its expense or deposited by others, and coordinate the preservation of microform masters made by other agencies.

The general objectives incorporated in the report and endorsed by ARL are still valid, but the proposals for action, now six years old, have not been transformed in any important way into actual operations. Meanwhile, the "preservation problem" is still with us and is, if anything, even more evident.

The reasoning prompting this study was based on the assumption that the general plan incorporated in the 1964 report needed only the addition of operational details and funding for implementation. During the process of preparing this paper, this initial view has been substantially modified and, as a result, the nature of the report itself has been affected. The objective, however, of suggesting specific steps that seem necessary to help move the research library community towards the preservation goals it has set for itself remains unchanged.

1.2 Scope and Method

This paper was not written to evaluate the scientific and technical work that has been undertaken to explain the causes of or to prescribe the cure for paper deterioration. Rather, it was written from the viewpoint of a library administrator who is aware of the preservation problem and its implications, and who is concerned that the right kinds of action be taken to work towards a solution. There is a conviction that, while there is no final solution to the preservation problem, certain actions can be taken now and in the future to reduce the dimensions of the problem to acceptable limits. There is recognition of the complexity of the topic and its relationship to other library concerns, of the economic implications of any program of action, of the social implications of the failure to act, and of the professional obligations to assume responsibility for the preservation of what man has recorded. This is not a research report but, rather, one of synthesis designed to help us use what we have and what we know instead of equivocating because of what we do not know.

The method employed involved reading, discussion, visiting selected libraries, reflection, and finally writing followed by more discussion, more reflection and final writing. A small number of individuals, most of them long concerned with preservation efforts, were consulted at various stages of this project.

2. THE NATURE OF THE PROBLEM

The process of growing bald and the deterioration of library collections have much in common. It is easy to ignore the loss of one strand of hair at a time, so long as there is overall growth. So it is with book collections. Individual volumes, by virtue of the fragility of the paper on which they are printed and in some cases by the manner in which they are stored, deteriorate and become useless. Their loss is regretted, but feelings of concern are muted by the security generated by annual collection growth figures. However, a time comes when even long hair can't conceal a shining pate, any more than current acquisitions can mask the physical shabbiness and the prominent gaps caused by the disappearance of thousands of volumes made useless by paper deterioration. And, somehow, neither wigs nor reprints are fully adequate substitutes for the original.

Even though the process that generates the preservation problem is subtle and undramatic, the problem itself is both real and a source of frustration to librarians and scholars alike. The frustration stems in large part from the fact that this is not one problem but many, each affecting scholars and librarians in different ways and to widely varying degrees. Because the problem is one of great complexity, neither a simple definition nor a single all-encompassing solution seems possible.

Any consideration of the nature of the problem must start with the established fact that a substantial portion of the books now on the shelves of research libraries, notably those published during the past 100 years, are deteriorating and becoming useless by virtue of shortcomings in the paper on which they are printed and by the conditions under which many of them are or have been housed. It would seem on the face of these facts that this is a technical problem most likely to be solved by technical means, but this is only partly the case, for the problem has financial, organizational, and important social aspects as well.

The financial character of the problem, whether the implications of information loss or the cost of remedial action is considered, is difficult to assess because the extent of the potential information loss is unknown and the value of information is seldom fixed. The financial dimension of the problem will, in the end, be established by the amount of money spent for preservation. For now, it should suffice to say that the amount already spent is substantial and the amount that will ultimately be spent promises to be in the millions of dollars.

The organizational complications inherent in a comprehensive national preservation program are as certain as the financial picture is uncertain. To begin, the concern is for millions of items, physically

dispersed among hundreds (and possibly thousands) of locations. Some items are duplicated many times over while others are unique or inherently distinctive. A study by the Library of Congress indicates that a wide range of physical conditions for individual copies of the same title can be anticipated. The history of past use for any specific item is largely unknown, as is the potential extent of its future use.

Although born of technical elements, assessed in significant though uncertain financial terms, and compounded by an inherent organizational maze, the preservation problem is in the end a social problem, for at stake are segments of our most important asset--the information that has been assembled, the experiences that have been recorded, and the wisdom that has evolved throughout human history.

To date, there is no evidence that the problem of preserving the human record will somehow be solved in the natural course of events. To the contrary, it seems that a conscious effort is required, not unlike that which has been devoted to saving historic landmarks after many were lost or that now being directed to our national resources after centuries of misuse and waste. The preservation effort requires some of the same elements common to these other efforts if it is to succeed: a dedicated group of individuals convinced of the merit of their cause and willing to work hard for it; presentation of sound programs of action in a way that generates confidence and respect on the part of those whose financial support is needed; and results that are readily evident to and respected by a significant and far larger group of individuals than the initial body of prime movers.

This prescription is a difficult one to fill. The membership of the group assuming developmental responsibility must be drawn from a relatively small number of individuals: librarians responsible for the oldest and largest research libraries of the country, especially those housed in urban areas where the ravages of their environment have compounded those of time; the few specialists in preservation processes; and certain interested scholars, especially those working in historical and humanistic fields where the endangered record is of immediate as well as of philosophical concern. Any program of proposed action must be realistic in both its aspirations and its financial requirements, goals that seem almost visionary given the dimensions of the problem. The final requirement for demonstrated results, readily visible and by their nature capable of generating expanded support, is perhaps the most difficult to meet, especially since the preservation of already existing collections is basically an unattractive topic and the temptation is to find a solution that would promote invisibility rather than prominence.

There are other limiting factors as well. Action is required now, but our knowledge of the chemical reasons for the deterioration of book paper is still imperfect; the ideal storage conditions for books and archives are not known with certainty; the techniques for stopping

the process of paper deterioration on an economically acceptable basis are only in the early stages of development; and the methods for restoring large collections are limited to certain kinds of repair and treatment that focus more on the page than the volume. Meaningful action under such conditions is difficult.

The shortage of funds for current library development further handicaps preservation programs. In the best of times, preservation efforts have had a low priority. In recent years, for example, many libraries have spent substantially more developing computer-based operating systems than they have spent to preserve their basic research collections. Given the present and anticipated future financial picture where the competition for funds will become, if anything, more intense, and given the pressures to expand resources and services, widespread enthusiasm for spending large sums of money preserving and restoring what is already on the shelves at the expense of collection growth and service capabilities is unlikely.

Still another handicap is the fundamental conflict between local operating realities and preservation requirements. The growth aspirations of individual libraries and the understandable and powerful drive of library users, faculty and students alike, for uncomplicated and unrestricted access to library resources is at odds with preservation-oriented programs which would sequester and isolate books and drastically curtail direct access to items in the preserved collection. There is no evidence that libraries, especially those with distinctive and uncommon collections, are to be easily moved to withdraw copies of volumes in excellent condition for inclusion in a preservation collection, nor are the scholars who depend on such collections likely to support any such move.

Finally, the number of individuals who are trained and fully competent to work in one or another aspect of a preservation program whether within a library, a restoration shop, a research laboratory or a national preservation enterprise is limited, a fact that further constrains the growth of an appropriately extensive national effort.

3. AN OVERVIEW OF CURRENT PRESERVATION ACTIVITIES

3.1 Research
3.2 Training
3.3 Preservation Programs
3.4 Reproduction
3.5 Prevention

Because the present is the backdrop for the future, this chapter describes by example the range of current activities pertinent to book and archive preservation. While there is no intention to provide an exhaustive inventory of work being done, it is probably appropriate to note that there seems to be considerably more concern and actual effort devoted to collection preservation objectives now than at any time in the past and that the rate of increase in attention to certain facets of this work seems to have accelerated rapidly in just the past two or three years.

3.1 Research

Only research that is undertaken in the interest of libraries and archives (as distinct from that keyed to paper industry objectives and concerns) is pertinent to this report. This work might be seen as being of two types: (a) that focused on causes of paper deterioration and (b) that concerned with the development of preservation methods. One is obviously linked to the other, but after a decade and more of investigation into causes there is some indication that a growing portion of total research effort is now being directed to the development of preservation techniques. The total amount of such research is modest, because while there are several major paper research organizations in the country, only a few are concerned primarily with the interests of libraries and archives. The National Bureau of Standards has done some important work in the past and is continuing work in this area under the sponsorship of the Society of American Archivists and the National Archives and Records Service. A new and what promises to be an important laboratory has been recently established at the Library of Congress.

But by far the most important research organization, in terms of contributions and continuing effort, is the W.J. Barrow Research Laboratory of Richmond, Virginia. Established by Barrow and operated by him until his death in 1967, the Laboratory has an ongoing program of research investigating the causes of paper deterioration that has done much in the last decade to sharpen the understanding of librarians and archivists alike of the nature and the significance of paper deterioration.

The staff of the Barrow Laboratory, which has been funded by the Council on Library Resources, Inc., since 1957, has studied the characteristics of book papers, developed testing methods, established specifications for permanent/durable book papers and catalog cards, has investigated the effects of temperature and humidity on paper and in recent years has moved ahead with experiments on processes to strengthen weak paper and to deacidify paper by gaseous diffusion. In the process of conducting its work, the Laboratory has spent much effort developing new equipment and improving existing equipment and testing procedures. The reports published by the Laboratory, beginning with Deterioration of Book Stock, Causes and Remedies in 1959 and continuing to the present, have had substantial influence. They have made librarians and scholars more alert to the problems generated by paper deterioration and have helped encourage in at least a small way some manufacturers of book papers and some publishers to make and use permanent and durable (p/d) paper. The research program projected by the Laboratory for the next two years gives high priority to developing new processes for the deacidification of books by gaseous diffusion, but will also include such projects as updating p/d paper specifications, further experimentation on the effect of storage temperature on paper, and determination of maximum safe pH in paper.

While most basic research has been done by research organizations, several conservators and other individuals have made notable contributions. In recent years, Richard D. Smith, working at the University of Chicago as a doctoral candidate in the Graduate Library School, has been prominent because of his extensive research directed towards development of a nonaqueous process for paper deacidification that might be applied to whole books at a low unit cost. The results of his investigations have been published and his dissertation contains a wealth of information pertinent to our topic.

3.2 Training

In general, practitioners in the field of book and manuscript conservation in this country have learned their skills as apprentices working with individuals abroad or in one or another of the few American libraries or archives having substantial conservation programs. During the last two or three years, however, the training process has accelerated. There have been several major conferences, seminars, and even formal academic courses involving a number of practitioners and students. These have served to introduce more people to the general subject of collection preservation and to teach the fundamentals of certain phases of conservation work. Examples include: (a) the 1971 University of Illinois summer session course taught by Paul Banks of the Newberry Library; (b) the Seminar in the Application of Chemical and Physical Methods to the Conservation of Library and Archival Materials held during May, 1971, and sponsored by the Boston Athenaeum under the direction of George Cunha;

and (c) the University of Chicago conference of August, 1969, "The Deterioration and Preservation of Library Materials." National and some state library associations have also sponsored a number of workshops and program meetings.

3.3 Preservation Programs

In moving from research and training to the topic of actual operating programs in libraries, the complexity of the preservation problem becomes apparent. In a sense, it is as if there were two preservation problems, one reducible to specific items or specific categories of material in individual research collections; the other a seemingly unscalable mountain of the millions of volumes in the slowly crumbling collections of older research libraries of the country. In the first case, there is some action and perhaps even progress. Logic would suggest that such progress would naturally lead to improvement in the second case as well, but the change in scale from the first situation to the second seems somehow to undermine the possibility of even a fleeting sense of accomplishment.

Briefly stated, the situation is this. Certain individual libraries are taking action to safeguard and preserve some of the distinctive items in their collections. In a few cases, planned programs to preserve text by filming have been undertaken. But there has been no real progress in developing and implementing a program of collective action to safeguard the substance of the mass of deteriorating printed books that are at the core of the preservation problem.

In certain libraries, reasonably sophisticated restoration facilities have been installed, providing the capability to deacidify documents and printed sheets, to laminate, and to restore and repair bindings. The cost of equipment and of space with the special ventilation and air conditioning required, to say nothing of the skilled operating manpower, represents a sizable investment. Such installations exist at or are available to such institutions as the Newberry Library in Chicago, the New York Public Library, the Library of Congress, the Boston Athenaeum, and a few university libraries, archives, and historical societies. But by and large, the number of institutions that have developed this type of facility is small. A number of commercial restoration firms supplement institutional capabilities. Examples include the W.J. Barrow Restoration Shop, Inc., in Richmond; the Graphic Conservation Department of R.R. Donnelley and Sons Company in Chicago and the Archival Restoration Associates, Inc., of Philadelphia.

In only a few cases have major libraries actually moved to set priorities and formalize procedures for comprehensive conservation efforts. A recent example (May 1970) of such a plan is incorporated in

the Memorandum on Conservation of the Collections by James W. Henderson of the Research Libraries of the New York Public Library. Observations made here on the status of institutional efforts are confirmed by Henderson, who notes (p. 16), "In spite of almost a quarter-century in which the need for administrative attention to conservation has been recognized, few libraries in the nation today have anything resembling a total conservation program or a conservation unit of significance."

There is not even this minimal level of activity when one moves from the case of the individual library working on its most obvious and, in a sense, most easily solved problems to the broader topic of collective action by research libraries to solve the massive problem of the deterioration of hundreds of thousands of books in each of their collections, most of them printed since the mid-nineteenth century on paper that bears the seeds of its own destruction. This is the problem on which the Williams report is focused, the problem that has stimulated the ARL effort during the past decade, the problem Barrow and his successors have defined so successfully, and the problem that still remains essentially unsolved.

By and large, with the exception of certain special projects, such as newspaper microfilming programs undertaken at the Center for Research Libraries under ARL auspices and a recently expanded program at the Library of Congress to film newspapers, little has been done. Concern about this failure is the stimulus for this report.

3.4 Reproduction

The obvious answer to a substantial portion of the preservation problem is text reproduction. By microphotography and other forms of republication, a tremendous amount of material housed not only in American libraries but in libraries elsewhere in the world has been reproduced by an essentially new branch of the publishing industry that has flourished during the past twenty years. An indication of the volume of reprinting can be had by noting that an analysis of the contents of the MARC file suggests that reprints currently constitute about 10 percent of all titles processed through the MARC system by the Library of Congress. The great bulk of this republication effort and the support given it by libraries has been generated by the unheralded expansion of educational and research activity in this country and elsewhere rather than by preservation objectives.

The primary purpose of this reprint activity has been to reproduce key publications in subject fields where a demand existed and the financial resources were available to build collections. Many of the oldest and largest research libraries provided access to their collections, often at little or no cost to the publishers, and in

effect contributed substantially to this process of dissemination and collection development. However, recent years have seen a re-evaluation by libraries of their relationships with commercial publishers, generated in part by the need to increase library income and in part by a growing conviction that a national republication program governed primarily by sales forecasts leaves unresolved the bulk of the preservation problem--that is, the many volumes for which demand is small but which, when taken together, represent an essential and critically important part of our intellectual heritage. This reappraisal has seen the development of better royalty arrangements, more formal contracts between publishers and libraries, and more interest in reprinting ventures by libraries themselves, all with the objective of turning back some of the profits from high demand items to the preservation of items of significant intellectual value but low economic potential.

One further concern of libraries is that much master negative microfilm made from volumes in research library collections, at times even at the sacrifice of the original volume, is now in commercial film vaults. Looking into the future as more volumes deteriorate, there is some real prospect of research libraries having to buy reproductions of material that was once in their own collections. More important, there is some concern that certain hazards to these resources or new constraints on libraries might develop in the future if ownership of these archives changes or access to them becomes more difficult.

3.5 Prevention

Any consideration of research collection deterioration would be incomplete without acknowledging the importance of prevention as a corollary to preservation.

While paper characteristics that enhance permanence and durability have been known for some time, and while paper production methods that provide these characteristics are employed in some instances, the cause of p/d paper production and use is far less advanced than those concerned with collection preservation would have it be.

Some university presses and a few other publishers have made use of paper meeting long-life specifications; however, there is some evidence of backsliding on the one hand and possibly too much latitude in interpretation of specifications on the other. Further, permanence of the final product is obviously not as important to the printer as it is to the librarian. The discussions on this aspect of the subject at the 1969 conference at the University of Chicago underscore the difficulty of establishing any sense of effective concern for paper longevity among printers and publishers, and even many paper manufacturers.

If manufacturers and printers are slow to respond to opportunities to end what might be termed unplanned obsolescence, many librarians themselves have not been as aggressive as they might properly have been in directing attention to this topic. On a different aspect of the same subject, that relating to storage conditions, too many distinguished research collections have been housed too long in overheated, poorly ventilated stacks, often exposed to all of the hazards of both gaseous and particulate air pollution.

Superimposed on these fundamental elements of paper characteristics and storage conditions are other factors such as types and quality of binding and rebinding and sheer misuse of books, a factor that becomes more pertinent as the books themselves become more fragile.

4. SUGGESTIONS FOR ACTION

4.1 Research
4.2 Education and Training
4.3 Preservation and Conservation Efforts in Individual Libraries
4.4 Collective Action
4.4.1 Organization for Collective Action
4.4.2 Collective Action Programs

We have described the preservation problem and the status of efforts to solve it. From this review, it is fair to conclude that there has been substantial progress in clarifying our understanding of the process of paper deterioration; we know a great deal about the dimensions of the damage; it is evident that a few libraries have been taking specific steps to conserve and prevent deterioration in their own collections; there has been some recent effort to develop skills required for conservation work; some proposals have been made to help resolve the preservation problem; and perhaps most important there is substantially more general awareness of the issues involved today than at any previous time.

However, the complexity of the subject and the sheer quantity of the material with which we are concerned are such that, despite real progress in specific instances, the core of the problem--the deterioration of a huge number of volumes in general and research library collections--is untouched.

In the beginning of this paper, it was noted that there seems to be no prospect for a single and absolute solution. Rather, working in the context of our understanding of the problem and the status of present programs, efforts should be directed to identifying additional action that might best help control the effects of collection deterioration and keep the threat within acceptable bounds. This section of the report identifies several kinds of action that seem to offer promise and suggests methods of proceeding.

4.1 Research

More facts are needed to answer several fundamental questions concerning both the causes of paper deterioration and the methodology of preservation and restoration of books. Important work is going on in several places pertinent to these topics, but it is suggested that even more concentrated attention is needed on certain key issues, both

to stimulate research progress and to develop a sophisticated awareness of the issues in the minds of those responsible for research collections. To promote these ends, it is suggested that the Library of Congress sponsor a series of annual seminars to report and review research activity on specific topics. The agenda of topics for the next three or four years should be developed and publicized to bring the chosen subjects to the attention of all individuals working in the field. Examples of such topics are:

(a) Inexpensive methods for deacidification of whole books
(b) The optimum conditions for book storage
(c) The manufacture and use of permanent and durable paper.

It is anticipated that the combination of appropriate sponsorship and the designation of specific topics as being of fundamental importance would attract individuals working on or knowledgeable about the subject. Such sessions might stimulate research activity and would help expedite the evaluation of findings to the advantage of both researchers and the library community at large.

The methodology of text preservation is a second area requiring further careful investigation. The process of preserving the textual content of deteriorating printed materials involves one or another of three approaches: republication, microphotographic reproduction, or the conversion of printed text to the form required for a computer-based storage and retrieval system. Because of the great magnitude of the preservation problem, because of the complexity of the inter-relationships of desirable concurrent objectives beyond simple preservation (i.e., extension of access, economy of storage, improved transmission of information, etc.) and finally, because of obvious economic constraints, it seems essential that a systematic consideration of the methodology of text preservation be undertaken. Drawing on the most sophisticated techniques of operations research, this study should seek to establish a long-term strategy for text preservation, including the formulation of performance specifications for any technological elements required to meet the economic parameters and service objectives judged essential for a viable system. The results of such an investigation would add an important and necessary dimension to the body of facts and practices now at hand, and would help promote the adoption of those specific procedures and methods that would be consistent with long-term requirements even while meeting immediate objectives. Research of this sort, which might eventually become part of a larger study of the processes of information dissemination, would have to be undertaken by an operations research team whose members would collectively provide the several specialized skills pertinent to the topic. The ARL Preservation Committee should take the initiative to bring this topic to the attention of the board of directors of the ARL and explore funding sources.

4.2 Education and Training

4.2.1 It is imperative, if substantial and appropriate support is to be developed for the full range of preservation activities, that the nature of the problem be brought to the attention of more librarians and, especially, more users of libraries. To accomplish this, it is proposed that several duplicate traveling exhibits be prepared to demonstrate the process of making paper, the effects of paper deterioration on collections and individual items, the causes of paper deterioration and methods being employed to curtail effects. Three or four such exhibits, modest in size but skillfully prepared and made available to libraries of all types for short periods of time, would help expand awareness among the general public of the preservation problem. The distinctive exhibition on paper-making mounted at the Library of Congress, coupled with the fact of expanded preservation activity and research there suggest the Library as a possible sponsor of this proposed program.

4.2.2 In order to keep those individuals who are administratively responsible for the preservation of large research collections fully informed, a more systematic and thorough method of disseminating information than those employed to date seems desirable. It is suggested that, perhaps on an annual basis, a report summarizing research activities and describing practical applications of new techniques and actual operating programs be prepared and distributed. While such a report might draw heavily on the occasional preservation notes in the Information Bulletin of the Library of Congress, preparation of this report should be a project of the Preservation Committee of the Association of Research Libraries.

4.2.3 Because the process of collection preservation has so many facets, ranging from such fundamental issues as the chemistry of paper deterioration on through the methodology of book and manuscript conservation, it is possible that a fundamental training program giving an overview of the subject might be developed for clerical and technical staff in libraries whose job is concerned with physical handling, preparation, and repair and maintenance of library materials. This would enable these staff members to see their work in the context of the broader issue of safeguarding library resources. If, in fact, the preparation of such a training tool is possible, it would prove of use in most libraries, especially where professional competence in the preservation area is limited. The program package might include a film as well as printed material.

4.2.4 An apprenticeship program to train technical staff for archive and library conservation will be necessary if the major libraries embark on substantial programs to safeguard their resources. In larger urban areas, such programs might best be promoted and sponsored by existing regional library organizations (METRO in New York City, for example), possibly contracting with a research library or a community college to administer the training program.

4.3 Preservation and Conservation Efforts in Individual Libraries

The dangers of information loss and erosion of collection integrity will be overcome only by the efforts of libraries and librarians acting individually and collectively. An upsurge of activity in a growing number of general and special research libraries to preserve their resources is a cause for some optimism. It is of utmost importance that this concern for the protection of distinctive resources be developed much further and translated into effective action in every library that sees within its own collections certain materials that might be regarded as an indispensible component of the total human record. Among the suggestions made to stimulate action by individual librarians and libraries are the following:

4.3.1 A carefully written and well designed booklet describing the dangers of collection deterioration and encouraging a commitment to forestall those dangers should be prepared and distributed widely. Many librarians would find such a statement, especially if it came from the ARL Preservation Committee, useful in communications with trustees and institutional administrative officers.

4.3.2 Every research library should establish a specific program of action for the preservation of its own resources. However modest such a program might be, goals should be carefully articulated and priorities for action set. The library commitment must support continuing rather than sporadic effort, and must not be allowed to ebb and flow with the interests of migrating administrators and fluctuating budgets. The program statement prepared by the New York Public Library is a useful model.

4.3.3 In every collection there are volumes that are distinctive in themselves. They are often unique for reasons other than their printed text, which might be duplicated in many editions and be readily located. Examples include volumes containing marginal notations of value, volumes that by virtue of extra illustrations or possibly even errors add meaningfully

to the history of a publication, volumes that are distinctively bound, or volumes reflecting prior ownership of significance. When possible such volumes must be preserved in their original form, because their distinctive characteristics are intellectually important and because a filmed version of any other copy of the same title would not reproduce the very characteristics that lend distinction. Volumes of this sort are found in every collection; each library has an obligation to identify such items and to guarantee their safety from misuse by individuals as well as from deterioration brought on by inadequate storage conditions.

4.4 Collective Action

Specific action within individual libraries is essential to overall progress, but the efforts of libraries acting alone cannot in the long run fully meet the intellectual and social threats implicit in the face of massive collection deterioration. The 1964 ARL report was in its essence a formal recognition of the need for collective action, and that recognition, as endorsed by ARL libraries, is the appropriate foundation for any future action.

There are two basic requirements for effective collective action, (a) organizational structure and (b) specific programs that will contribute to a resolution of the preservation problem. These topics are considered separately in this section.

4.4.1 Organization for Collective Action

The appropriate organizational structure to carry out programs pertinent to preservation is difficult to establish for two principal reasons. First, the problem of massive collection deterioration is readily apparent in relatively few of the research libraries of the country. An informal survey of libraries represented at the January 1971 ARL meeting reinforced the validity of earlier assumptions that it is the oldest and the largest research libraries, generally in urban locations, that view the preservation problem most seriously. But the very fact that the resources of these libraries are those most endangered is reason enough for wide concern because these libraries collectively serve as ultimate national resources. Further, the fate of these collections is a predictor of what will happen in time to others. Thus, while perhaps fewer than twenty general research libraries are concerned that massive action on the preservation problem be taken quickly, many more libraries and thousands of scholars will be directly affected by such action.

The second element affecting organization for collective action stems from the fact that preservation activities tend to serve and are perhaps overshadowed by other functions. Because the products of much preservation work are reprints and microfilm, the process of preservation is one of information dissemination as well. The importance of this relationship, while always acknowledged, has not necessarily been fully understood.

The 1964 ARL report viewed dissemination as a by-product of preservation, a matter that has been given serious consideration by Edwin E. Williams, associate university librarian of Harvard University, in a paper read at the Thirty-Fourth Annual Conference of the Graduate Library School of the University of Chicago in 1969 and subsequently published in the Library Quarterly for January 1970. Williams' comments are especially important because he served as secretary of the ARL Preservation Committee for almost a decade and was central to many committee decisions and actions. In part Williams says, "Would we not do better, at least whenever nonlibrarians are listening, to speak of preservation as a by-product of accessibility and continued dissemination?" (p. 15). Williams continues, "As has been suggested, the ARL proposal could, without alteration, be given a better title. However, if it were rewritten to emphasize the objectives of dissemination and accessibility, it is possible that the reworking would suggest some modifications in the machinery that is recommended." (p. 16).

The case for advancing the cause of preservation in the course of improving the distribution of information and access to it has many points in its favor. Certainly the goal of dissemination and extended access is more attractive than that of preservation to the public at large, many library users, and even potential funding sources. In the end, however, the two must be seen as inseparable parts of the fundamental library obligation to create and maintain resources for research.

These two fundamental but essentially unrelated elements, i.e., (a) the small number of libraries vitally and immediately concerned and (b) the great importance of dissemination as the obverse of preservation, suggest both an initial and an ultimate organizational structure to support programs of collective action.

Because only a few libraries are most immediately concerned, it is suggested that ten to fifteen libraries join together for a period of no more than one or two years to carry out certain specific preservation projects of the type suggested in the following section of this report. Success in such projects would pave the way for next steps; failure would perhaps call for another approach or might even indicate that the time

is not yet ripe for effective collective action towards preservation goals. A "preservation consortium," operating independently or under the auspices of the ARL or the Center for Research Libraries and investing a modest amount of time and money, would be the most direct way to test the validity of the proposition that collective action is essential to further progress, not only on the core of the preservation problem but on the broader but closely related matter of dissemination as well.

There is a fundamental question posed by this suggested demonstration, one that needs resolution before research libraries, taken together, are likely to be able to make any dramatic change in their service capabilities. Simply stated, the question is whether or not these libraries can act collectively towards specified ends through some appropriate new operating structure of which they are each a part. Whether the question at hand concerns a comprehensive national program for preservation, dissemination, or one of several other possible activities of like dimension, chances for success ultimately hinge on finding a permanent way for research libraries to take effective collective action.

Demonstrated progress by a "preservation consortium" towards the formulation of common preservation procedures and uniform performance standards is required before a continuing program of action can be installed. Such procedures might be suggested here, but they would be without the validity that would come if they were developed in discussions among equal partners. Given success at this basic level of effort, the way would be paved for what seems a major and necessary future step for the research libraries of the country--the creation of a national library corporation as a base for collective action in the full range of activities in the inter-related areas of preservation and resource development. The case for creation of such an organizational innovation might be presented as follows.

There are in the final analysis three fundamental activities central to all research library operations: (a) resource development, (b) item or information identification and location, and (c) service to individual users. The processes related to each of these are numerous and clearly inter-related, but the foundations on which they are based are quite different.

In the case of information identification and location, there is a clearly understood requirement for a comprehensive bibliographic record for recorded information in all forms.

To most people concerned with the problem it seems essential that the three national libraries acting in concert, but with the Library of Congress central, must assume responsibility for this activity, obviously with input from many sources.

Concerning service to individuals, the standards, operating style and quality of service for students and scholars must in the end be set by each library for its clientele. To be sure, many factors outside as well as within specific libraries affect performance, but in the end the responsible agency for service delivery is clearly the individual library itself.

As for the remaining activity, resource development (and its corollary, preservation), the appropriate underlying mechanism is less evident even though it seems that the rational development of research resources on a truly comprehensive scale and on a nationally and even internationally acceptable pattern that promotes access and equitable distribution on all counts (geographical, economic, etc.) is a responsibility that must be assumed and shared by all research libraries. The national libraries cannot by themselves be expected to take on this obligation. Rather, they should simply share in it, along with all other research libraries.

In the final analysis, however, the research libraries of the country lack a capacity for collective action that is suitable to the dimension of the job to be done. It is to fill this need that a national library corporation is proposed. Such an organization would both serve and be the responsibility of research libraries acting collectively and ideally would become an integral part of each individual research library. A single organization of the kind advocated here, rather than a multiplicity of agencies developed to solve individually what are really inter-related problems, would avoid duplicate organizing effort, unnecessary competition for the best administrative talent, and an excessive administrative cost to program cost ratio. Such a corporation would provide a useful backdrop against which regional and other cooperative ventures might be rationally and purposefully developed. Most important, a single, national, operating agency, focused exclusively on developing and maintaining the nation's research resource capabilities in a way that would expand their totality, preserve their integrity, and promote accessibility, would serve as a cohesive force for libraries whose stock in trade--recorded knowledge--is an indivisible asset of all of society.

Permanence, financial and operating stability, responsiveness to the needs of research libraries, and a capacity for formulating and undertaking major ventures effectively are only

a few of the many obvious qualities that the corporation must have if it is to become an inseparable element of each library, and this must be the case because significant advances will not come in this area of collective action if the "collective" element is viewed simply as an appendage to existing individual operations.

The "preservation consortium" is seen as a logical first step towards creation of the national corporation. Additional "collectives" organized around other goals in the same broad area of resource development and preservation might also move towards the corporation concept, but in the final analysis, only a structure as powerful as that envisaged can have the performance capacity and the durability that seems to be required by the magnitude and the importance of the job to be done.

4.4.2 Collective Action Programs

The preparation of this paper was undertaken initially to identify and detail the steps required to implement the plan advanced in general terms in the 1964 ARL report, i.e., to establish a responsible preservation agency and a national preservation collection. It has been suggested that formation of a consortium of those libraries most immediately concerned with preservation problems might be an appropriate preliminary step towards creation of the larger national agency. In the paragraphs that follow, it is suggested that these libraries work together to establish specifications for several specific kinds of action to be taken by each individual consortium member. Participation in the process of establishing specifications for individual action is seen as a useful and perhaps necessary first step in the direction of the major collective action programs that seem essential if national preservation and dissemination goals are to be met.

Among the activities important to future progress are the creation of prototype preservation collections at the local level, the formulation of preservation priorities, and the preparation of plans to establish, maintain, and finance a national collection of negative microfilm.

4.4.2.1 For a number of reasons, it seems unrealistic to assume that a new and separate national collection devoted exclusively to preservation purposes will be established in the near future. Many of the books for

such a collection would have to come from existing libraries. This assumes an institutional altruism that seems overly optimistic. Even given unexpected generosity, the cost of such a new venture appears beyond the means that are presently available. Further, it has been noted that national efforts at preservation seem, on reflection, to stand the best chance of success when they also serve the equally important objective of dissemination.

But given the difficulty of attaining this theoretical goal of a national preservation collection, the principle of setting aside the best copies of "endangered titles" under conditions that will slow the rate of deterioration and expedite access by reproduction or text transmission is still eminently sensible. The only real alternative to a central collection seems to be the creation of a coordinated system of collections in a national plan, each with a distinctive and specific research orientation or, in certain cases, a format orientation. Such collections would meet preservation purposes, but they would also serve the broader function of a national research resource as well. As a way to test the validity of the concept of a system of national collections, it is suggested that the consortium libraries most immediately concerned with preservation constitute themselves a test group to take certain preliminary planning steps. Experience gained from this process would be the best possible base for a further commitment at the actual program operating level. Among these initial steps are formulation of standards governing storage, use, bibliographic control, and item identification.

Local preservation collections, whether established as components of a decentralized national system or seen as prototypes for an eventual national collection, must necessarily be operated in line with commonly accepted standards governing storage conditions and use. The consortium, possibly with help from the Educational Facilities Laboratory, should make it an early order of business to formulate the required physical specifications.

While not all facts pertinent to book storage are known, there is nonetheless a substantial body of knowledge concerning storage conditions on which realistic specifications can be based, subject to refinement as additional parts become known. Review of a number of publications identified in the bibliographic notes at the

end of this report suggests that a brief publication is needed to organize, assess, and synthesize the information basic to preservation storage for the use of librarians and architects. Additional information in the building programs and architectural specifications prepared for several general research and rare book libraries constructed in recent years might also be drawn upon for the proposed statement.

Obviously, major structural changes cannot be made in existing buildings to meet ideal, preservation oriented specifications, but it is equally certain that realistic standards established with preservation goals in mind would be useful in planning new construction and modifying existing buildings. In the end, it would seem that the parent institutions of libraries professing to assume national responsibility for safeguarding significant research collections, whether broad or narrow in scope, cannot properly avoid meeting the obligation to house those collections in a way that promotes rather than thwarts preservation objectives.

The specifications should include consideration of structural topics such as load capacities, materials used, and design characteristics important to preservation goals. Building systems for fire detection, fire extinguishing, user control, emergency exit control, and all environmental elements (heating and cooling, humidity control, air cleaning, lighting, etc.) also need to be described in the light of preservation and protection objectives.

Libraries participating in any national preservation program would be expected to meet specified minimum standards for physical storage. By the same token, mutually established and accepted rules would govern the use of items formally included in any preservation collection. At the minimum, it seems certain that books would be noncirculating and would be used only under controlled conditions. They would not be available on interlibrary loan.

Given standards for storage and controls governing use, a method of item identification and a plan for bibliographic control are also required elements for a system of prototype preservation collections. While it is important that the consortium members themselves work out the details of these systems, preliminary investigation

suggests that reasonably efficient methods can be established by capitalizing on existing bibliographic tools and book identification systems. For example, a simple listing of the numbers already used (or assigned for eventual use) for each item in the published edition of the National Union Catalog could be annotated with the symbol of the library holding the "national copy." Continuation of the present NUC numbering system in the planned NUC supplement for pre-1956 titles not included in the basic catalog would open the way to locating national copies of these titles as well. It also seems possible to create a numbering system, using the Standard Book Number format, for purposes of supplying a number for any title not listed in the NUC. This approval should be considered especially if the SBN and its counterpart for serials (Standard Serial Number) become the standard for item identification in a national or international bibliographic system.

A second control element is a system for identification and reporting of national copies. An example of an approach that might be taken would involve use of a book label carrying specific wording such as "National Resource Copy" and the appropriate identification number. Periodic reporting to a central point of the identification numbers of items so designated would be required of participating libraries. The presence of the label in a book would commit the owning library to store the item under conditions agreed upon and to control use in accordance with the established plan. In a real sense, items so designated would become by definition a national asset as well as an institutional resource.

4.4.2.2 The 1964 report argued that on a cost basis alone selective preservation, as distinct from automatic inclusion of all materials found in any research library collection, could not be justified. Rising labor costs during the intervening years almost certainly reinforce that conclusion, but given the fact of minimal funding at best, it would seem important to consider the merits of purposeful inclusion over random selection, simply because the real objective is to preserve and extend access to the best and most useful material, not simply to the most material. Only if we assume that the great bulk of all published material will be protected within a reasonably short time is the random (or nonselective) approach valid. There seems little justification for this conclusion.

Individual libraries have been urged to identify and protect the "distinctive" volumes in their collections. It remains to consider categories and priorities for inclusion in any integrated system built around the mutual efforts of cooperating libraries. Those libraries themselves must ultimately set realistic goals, but several approaches seem open to consideration. First, there is considerable interest on a national scale in a journal lending library. Preservation as well as dissemination objectives should be given considerable importance in planning for such a unit. The assurance that volumes in such a collection (or collections) are in fact to be permanently retained and stored under appropriate conditions would reduce constraints on individual libraries, and open them to more reasonable approaches to resource retention. In another category, that of government documents, the depository system as it now operates provides an example of another approach whereby extension of presently stated responsibilities to include the elements central to preservation would help reduce the dimension of the total problem.

Even given the many opportunities to introduce preservation goals into such existing and projected projects, the dimension of the remaining task is still almost unsurmountable. Only by adding preservation goals to the prospect of national resource collections of the kind currently being considered in professional discussions does it seem possible to reduce a massive problem to manageable proportions. By not aspiring to preserve everything, and concentrating instead on discrete subject areas, some real progress becomes possible. For example, by identifying and establishing as preservation volumes acceptable copies of American imprints, 1870-1900, included in a collection designated a national resource collection for 19th century American literature, a first step would be taken towards a viable preservation program in a broad subject field. The designation of two or three libraries as resource collections for the same subject would extend coverage and would promote coordination of preservation efforts among those libraries having the largest and, in the sense of national interest, the most important collections.

In all probability, the consortium libraries should consider excluding certain categories of materials (e.g., textbooks, language grammars) from first priority efforts and should focus initially on certain subject areas (i.e.,

humanistic studies, all primary national sources, literary works, etc.). The extent of potential markets for films or reprints of items in proposed categories should weigh heavily in initial preservation program designations, both for the potential income and the high level of program visibility.

4.4.2.3 The objective of extending access to materials selected for preservation purposes and included in national resource collections calls for more sophistication in text copying and/or text transmission systems than most research libraries have been able to display. This general area of activity is one in which there is promise of considerable technological development. For example, computer-stored text might at some future time provide an economically sound alternative to microfilm and even certain printed material for at least some purposes. Further, there is already evidence that the forms in which information is recorded (microfilm, for example) must in the future meet the requirements of transmission equipment as well as of reading and copying machines. But regardless of the form technical advances take, it is essential that the research library community retain ownership and control of master copies made for the purpose of extending access to or preserving the content of physically deteriorating publications in research library collections.

It is suggested that the consortium libraries consider the concept of a planned program of microfilming, including collective ownership of master negatives produced as part of any text preservation project. This approach would standardize charges for film, would open the way for commercial publishers to obtain access on a royalty basis to consortium film, would expedite reporting of master negatives, would open the way to improved quality control, and would permit the consortium to contract with universities or with commercial firms for film production.

By way of example, a revolving fund might be used to pay for consortium negatives, with charges for positives set at total direct cost plus a uniform service fee of $3.00. A service fee, set at the $3.00 level, would in effect mean that the sale of two to three positives of any title would cover the cost of the original negative. Royalty income from commercial users

of negatives would likewise support additional negative production. On the basis of cost studies made for this report, creation of a $250,000 revolving fund would support master negative production at the rate of 2,000,000 pages anually for a minimum of three years. An experiment of at least this duration seems required to fully develop the procedures and to test the market for positive copies in a reasonably wide range of subject fields. A successful demonstration at this level might promote the pooling of existing master negatives on some kind of credit basis.

A second area of activity that might be considered by the consortium members is the involvement of one or several university presses in a reprinting program keyed to preservation objectives. Perhaps working on a cost-plus basis, the production and manufacturing expertise of university presses might be put to use as part of a total system of text preservation and distribution designed for maximum results at minimum costs.

5. FINANCES

Only after the merits of specific programs proposed are judged and decisions are actually made about how to proceed will realistic discussions about financing be possible. As we have seen, the preservation problem is complex, and it is probable that many kinds of action by individuals, organizations, libraries, and groups of libraries will be required.

Funding methods and funding sources are certain to be at least as difficult and as numerous as are the proposed programs for action. On the one hand, the case can be made that each individual library has a real obligation to use a portion of its operating resources for preservation, simply because this function is a kind of inseparable corollary to collection development. This point of view cannot be faulted, but one of the messages implied in what has gone before is that the investment of individual libraries in preservation related activities will produce more in the way of actual results through coordination and complementary efforts of many libraries than will independent action.

Certain other areas of activity seem completely appropriate for consideration of foundation support. Much of the present research effort is funded in this way, and extension of effort in this area would seem possible. Further, foundation support would seem worth exploration for development of the preservation consortium, especially if that organization could be viewed as a prototype for some form of permanent national corporation.

In the end, however, substantial additional funding will be required to preserve recorded information, to further develop national information resources, and to provide reasonable access to information for all who need it. We have argued that, in the end, these are inseparable goals. We would assert with equal force that these are goals of highest importance in terms of both social needs and national interest. Federal financial support of great magnitude is essential if the individual research libraries of the country are to become in fact as well as in theory a true national asset. It seems certain that the impact of federal funds would be amplified many times over if those funds are used to further develop already distinctive research resources, to promote a rational program of resource preservation, and to open the way to their most effective use.

BIBLIOGRAPHIC NOTES

I

The list of publications on one or another aspect of the preservation problem grows in length each year. Many of the most important items are identified in the extensive bibliographies or lists of references included with the following:

Smith, Richard D. "New Approaches to Preservation." The Library Quarterly 40 (January 1970): 139-171.

Smith, Richard D. The Nonaqueous Deacidification of Paper and Books. A dissertation submitted to the Faculty of the Graduate Library School, University of Chicago, Chicago, 1970.

Smith, Richard D. "Paper Impermanence as a Consequence of pH and Storage Conditions." The Library Quarterly 39 (April 1969): 153-195.

Wessel, Carl J. "Environmental Factors Affecting the Permanence of Library Materials." The Library Quarterly 40 (January 1970): 39-84.

Williams, Edwin E. "Deterioration of Library Collections Today." The Library Quarterly 40 (January 1970): 3-17.

II

There are several fundamental publications that serve as a starting point for any serious review of the effect of book paper deterioration on libraries and the efforts of libraries to come to grips with the problem.

W.J. Barrow Research Laboratory, Inc. Permanence/Durability of the Book. 6 vols. Richmond: Virginia State Library, 1963-1969.

Church, Randolph W., ed. The Manufacture and Testing of Durable Book Papers. Virginia State Library Publications, no. 13. Based on the investigations of W.J. Barrow. Richmond: Virginia State Library, 1960.

Deterioration of Book Stock: Causes and Remedies: Two Studies on the Permanence of Book Paper. Virginia State Library Publications, no. 10. Conducted by W.J. Barrow and edited by Randolph W. Church. Richmond: Virginia State Library, 1959.

"The Preservation of Deteriorating Books: An Examination of the Problem with Recommendations for a Solution." Report of the ARL Committee on the Preservation of Research Library Materials. Minutes of the Sixty-fifth Meeting of the Association of Research Libraries, Washington, D.C. 1965.

Shaffer, Norman J. "Library of Congress Pilot Preservation Project." College and Research Libraries 30 (January 1969): 5-11.

Williams, Edwin E. "Magnitude of the Paper-Deterioration Problem as Measured by a National Union Catalog Sample." College and Research Libraries 23 (November 1962): 499, 543.

In addition, there is much of general interest in the following: the article by Richard D. Smith, referred to above ("Paper Impermanence as a Consequence of pH and Storage Conditions"); the entire January 1970 issue of The Library Quarterly; specific sections of Libraries at Large, ed. by Douglas M. Knight and E. Shepley Nourse (New York, Bowker, 1969) offer important insights into the nature and dimension of the preservation problem; and Conservation of Library Materials, by G.D.M. Cunha (Metuchen, N.J., Scarecrow, 1965). In addition, occasional appendices to the Information Bulletin of the Library of Congress report preservation activities, and issues of Restaurator, Copenhagen, 1970, include notes of recent developments.

III

Several publications not included above are pertinent to specific sections of this report.

On library preservation programs:

The New York Public Library. Memorandum on Conservation of the Collections. 1970.

On storage facilities:

Metcalf, Keyes D. Planning Academic and Research Libraries. New York: McGraw Hill, 1965.

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On microfilm programs:

Association of Research Libraries. Microform Technology Project. Interim Report. Washington, D.C.: 1970.